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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/747,737	12/29/2003	Todd Bailey	21554-0042002	2048
26201 7590 06/02/2009 FISH & RICHARDSON P.C. P.O BOX 1022 Minneapolis, MN 55440-1022				
EXAMINER				
LUK, EMMANUEL S				
ART UNIT		PAPER NUMBER		
1791				
NOTIFICATION DATE		DELIVERY MODE		
06/02/2009		ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PATDOCTC@fr.com

# Office Action Summary

**Application No.**

10/747,737

**Applicant(s)**

BAILEY ET AL.

**Examiner**

EMMANUEL S. LUK

**Art Unit**

1791

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 May 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SF/ICE)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Status of Claims***

1. Status of Claims: Claims 1-18 are pending.
2. The Request for Continued Examination of the application is acknowledged.

### ***Claim Rejections - 35 USC § 103***

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
4. Claims 1, 2, 5-8, 10-15, 17, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heidari (2003/0159608) in view of Hector (5804017), Aoyama (5194743) and Doran (5716742).

Heidari teaches a lithography device for structure of the nanometer size (see Abstract), the device having a body 3 with an opening formed between the ring 11b, the body further having a vacuum supporting plate 14 having vacuum connections 20, wherein template 10 is held in place.

Heidari fails to teach a transparent support plate and a piezo system.

Hector teaches a flexible stamper 20 that is held in position by a body 28 with opening and further having a transparent plate 18 behind the stamper that allows for a UV source 42 to shine through. Hector is relevant to the arts as it relates to the imprinting arts as the stamper is pressed into a substrate of curable polymer.

Aoyama teaches the positioning of a stage using an X-Y stage 100 that is positioned while holding the substrate with servo control and the positioning operations are read through X and Y digital micrometers 12, 16, Col. 19, 56-64. While Aoyama

pertains to the manufacturing of semiconductor wafers W, it is relevant to one skilled in the art due to the adjustments to the stage for alignment.

Doran teaches an alignment system that utilizes piezoelectric actuators 44, 46, 48 for adjusting the position of the X-Y stage 32. The use of piezoelectric actuators as a piezo system for controlling the X-Y stage is well known for use in alignment of a wafer or workpiece. One of ordinary skill in the art would have recognized the use the of piezoelectric actuators in alignment of wafers and thus can be applied to the X-Y stage of Aoyama and for aid in positioning other stages including a stamper taught by Hector and the device taught by Heidari.

It would have been obvious for one of ordinary skill in the art to modify Heidari with a transparent support plate taught by Hector thereby allowing for the material worked upon to be cured by the UV source during imprinting operation and the alignment system taught by Aoyama for aligning the stage and piezo system as taught by Doran since the actuators can be substituted for the same results in positioning the body.

5. Claims 3, 4, 9, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heidari (2003/0159608) in view of Hector (5804017), Aoyama (5194743) and Doran (5716742) as applied to claims 1, 2, 5-8, 10-15, 17, and 18 above, and further in view of Semiconductor Memories (see IDS).

Heidari in view of Hector, Aoyama, and Doran fails to teach the supporting plate is formed from silicon dioxide.

Semiconductor Memories teaches the use of Silicon Dioxide as backing support for the silicon wafer (see page 91).

It would have been obvious for one of ordinary skill in the art to modify Heidari in view of Hector to use silicon dioxide as taught by Semiconductor Memories since it is a known transparent material used in the arts that allows for materials to cure.

### ***Response to Arguments***

6. Applicant's arguments with respect to claims 1-18 filed on 5/14/09 have been considered but are not persuasive. The applicants have included amended features utilizing a piezo system for changing the dimensions of the body, this broadly interpreted includes maneuvering the piece in an X-Y direction as for alignment and this is known in the lithography arts. New references, Doran and Aoyama, have been incorporated with Heidari in view of Hector for addressing the claimed invention.

### ***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Van Den Brink 5801832 and Murouchi 6036568.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to EMMANUEL S. LUK whose telephone number is (571)272-1134. The examiner can normally be reached on Monday-Fridays from 9 to 5.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Yogendra N. Gupta can be reached on (571) 272-1316. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Yogendra N Gupta/  
Supervisory Patent Examiner, Art Unit 1791

EL